

Capel and Caplin - Chronic Bronchitis in Great Britain, London 1964

This is a 55 page monograph by two eminent physicians of the London Chest Hospital, consisting of 2 parts. The first part deals with "Bronchitis as a national problem and its causes." The second part discusses "Bronchitis and the social services."

The first part includes brief chapter on the following topics: The nature of bronchitis; The patient with severe disabling chronic bronchitis. Prognosis and complications of chronic bronchitis. Causes of chronic bronchitis - bronchial irritation. The results of bronchial irritation. Air pollution, cigarette smoking and prevalence of chronic bronchitis. The level of air pollution and prevalence of fatal, disabling and simple chronic bronchitis. Cigarette smoking and simple chronic bronchitis. Cigarette smoking and disabling chronic bronchitis. Cigarette smoking and mechanical efficiency of the lungs. Cigarette smoking and fatal chronic bronchitis. Problems and present conclusions.

In this separate analytic evaluation of the factors concerned in subchapters listed above, following statements appear:

"Simple chronic bronchitis refers to cough and expectoration but no disability."

"Disabling chronic bronchitis is recurrent chest illness with increased volume of sputum and breathlessness on effort."

"Whether simple chronic bronchitis always leads to disabling chronic bronchitis and the circumstances in which progression might occur are not yet known.

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"Within 5 years 31% of a group of civil servants attending a clinic for disabling chronic bronchitis were dead. . ."

It is probable that chronic bronchitis is caused by bronchial irritation; the irritants are air pollution, cigarette smoke, infection (\*viral or bacterial). Each may cause increased bronchial secretion predisposing to infection.

Normally delicate bronchial lining covered by thin layer of secretion as irritants cause increased secretion resulting in expectoration. Bronchi may become plugged causing cough and expectoration and eventually breathlessness. This is disabling chronic bronchitis. Bronchial plugs trap air in alveoli causing destruction - emphysema and permanent breathlessness on effort.

Influence of air pollution, cigarette smoking and prevalence of chronic bronchitis demonstrated by medical research in Great Britain. Data came from three sources, (1) Mortality statistics (Reg. Gen.), (2) Sickness absence records (National Insur.), (3) Field surveys at homes, at work or at hospital.

A. Air pollution and fatal chronic bronchitis - home coal fires cause most pollution. The more coal burned the higher pollution, higher bronchitis. Most urban dwellings more bronchitis mortality than rural, more in large than in small towns. More mortality in unskilled laborers in cities. Sickness absence rates for chronic bronchitis increased with level of air pollution. 2015034720

B. Air pollution and disabling chronic bronchitis. If air pollution is associated with excessive chronic bronchitis it is also associated with disability and high sickness absence rates for chronic bronchitis increased proportionately with increased air pollution. High sickness absence rate three times greater in heavily polluted areas, could not be explained by social, economic conditions or overcrowding (postmen).

Simple chronic bronchitis as prevalent among countrymen as among townsmen independent of air pollution; differs from disabling chronic bronchitis which is more prevalent in the towns.

Air pollution and progress of chronic bronchitis.

In Great Britain simple chronic bronchitis very common especially in older men, once established so aggravated by air pollution that it may progress to disability and death.

Air pollution disabling chronic bronchitis and social class.

Less skilled workmen and their wives suffer more from fatal disabling chronic bronchitis than professionals, why not known! Too many factors in poorer parts of big towns, overcrowding, more pollution of air.

Cigarette smoking and simple chronic bronchitis.

The more cigarettes a man smokes, the greater chance he will suffer from simple chronic bronchitis. Pipe and cigar smokers much less affected, majority of smokers stop coughing when they stop smoking. In few fields of medical investigating is there such unanimity (10 reports from lit.)

Only 1 woman dies of chronic bronchitis for every 4 men, in clinical surveys. Bronchotic men usually outnumber women in same proportion, but prevalence of simple chronic bronchitis similar in groups of men and women with similar smoking habits. Chronic bronchitis commoner in men because they smoke more heavily. Disabling chronic bronchitis much less common among smoking women, possibly bronchi less easily damaged by irritants.

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Cigarette smoking and disabling chronic bronchitis.

Disabling chronic bronchitis (cough expector. chest illness) much more common among smokers than nonsmokers, and so is dyspnea on effort.

Cigarette smoking and mechanical efficiency of lungs.

Smokers have less efficient lungs than nonsmokers. Particles irritate, cause hypersecretion, stagn. of mucus causes smokers cough, infection and causes complications.

Cigarette smoking and fatal chronic bronchitis.

Chronic bronchitis with complications found more often in smokers than in nonsmokers. From this and from relation between smoking and disabling bronchitis it would be expected that bronchitis death rate would be higher in <sup>smokers than in</sup> ~~smokers than in~~ nonsmokers. This is so. British doctors' death rate from chronic bronchitis higher in smokers increased with number of cigarettes smoked, with 25 cigarettes i.d. it was 6 times as much as in nonsmokers.

Chronic Bronchitis and combined influence of air pollution in smoking.

Air pollution does not affect prevalence of simple chronic bronchitis. Same in country and in town. In contrast disabling chronic bronchitis more prevalent as urban air pollution increases. Cigarette smoking increases prevalence of both simple and disabling chronic bronchitis. Townspeople affected by both; <sup>(smoking and air pollution)</sup> ~~these~~ may so irritate bronchi that <sup>they</sup> ~~he~~ becomes subject to chest illness. There is more than 1:16 chance that <sup>they</sup> ~~he~~ suffer permanent lung damage and die of it.

Both simple and disabling chronic bronchitis are found in a small proportion of men (bet. 40-64) who live in unpolluted areas and do not smoke. On the other hand a large proportion (75%) of townsmen in this age range who smoke claim to be free from chronic

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bronchitis. Possibly this proportion of men and perhaps greater proportion of women <sup>are</sup> constitutionally able to resist the inhaled irritants which cause illness in their fellows?

"An important task for the future will be investigation of the relationship between simple and disabling chronic bronchitis. So far it has not been shown that a progression necessarily occurs. If simple chronic bronchitis can be shown to lead to disabling chronic bronchitis, are air pollution and cigarette smoking the agents of changes? It is hoped that these questions will be answered by work now in progress. For the present it seems certain that as long as air pollution and cigarette smoking remain national habits, then so long will disabling chronic bronchitis remain a national problem.

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